

# Description of All Components

## WelcomeView

- *This component is a view that displays the vibrant welcome screen that introduces the player to the game's title and allows them to open the world map.*
- *Only the **WorldMapView** communicates with the model. It communicates the following:*
  - *The **WelcomeView** communicates to the **WorldMapView** to navigate to it*

## WorldMapView

- *This component is a view that displays the world map that has the Math, Geography, and Chemistry islands.*
- *The **DifficultyView** and **GameView** communicate with the model. They communicate the following:*
  - *The **WorldMapView** communicates to the **DifficultyView** to navigate to it*
  - *The **WorldMapView** communicates with the **GameView** to update which question type is selected*

## DifficultyView

- *This component is a view that displays the difficulty selection screen, which changes the map to one that has an enemy path length that is either easy, medium, hard, or EXTREME*
- *The **WorldMapView** and **GameView** communicate with the model. It communicates the following:*
  - *The **WorldMapView** communicates to the **DifficultyView** to navigate to it*
  - *The **DifficultyView** communicates to the **GameView** to navigate to it and pick which type of map is selected*

## GameView

- *This component is a view that displays the main GUI for the game once a user is in level. It has the grid map in the top middle, a question screen on the left side, a menu at the bottom middle, and a tower purchase screen on the right side.*
- *Several different components communicate with the **GameView**. The following is communicated:*
  - *The **UserController**, **TowerController**, and **EnemyController** update components in the viewer, while the **GameView** communicates user actions to the Controllers*

### ***UserController, TowerController, and EnemyController:***

- *These components are controllers that perform functions for the objects and update the components in the viewers.*
- *Several different components communicate with these Controllers. The following is communicated:*
  - *The **GameView** takes input and viewed data and passes it to the Controllers to perform logic*
  - *The **UserModel, TowerModel, and EnemyModel** communicate stored data about objects to the controller so it has data to perform logic*

### ***UserModel, TowerModel, EnemyModel, and MapModel:***

- *These components are models that receive and store processed information from their controllers so that the controllers will have future access to object data.*
- *Several different components communicate with these Models. The following is communicated:*
  - *The **GameView** is updated by the data stored in the Models*
  - *The Models communicate data to the Controllers that will ultimately be processed*

**UML link:**

[UML DIAGRAM @ LUCIDCHART](#)